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Comments on Staff Assessment 5-7 Hazards, Hazardous Materials

See Attached Comment Letter

Additional submitted attachment is included below.

California Energy Commission
Corby Battery Energy Storage System Project
Docket No. 24-OPT-05

Comments on Staff Assessment Section 5.7
Hazards, Hazardous Materials/Waste, and Wildfire

Commissioners:

I submit these comments regarding Section 5.7 of the Staff Assessment, Hazards, Hazardous Materials/Waste, and Wildfire.

Staff has devoted substantial effort to battery-fire risk. But the Commission is still being asked to make a less-than-significant finding without resolving several basic questions that go directly to the consequences of a serious BESS fire: why the offsite consequence model stops at one burning enclosure; how emergency responders will reliably reach the site and residents leave it; what monitoring result triggers evacuation or shelter-in-place; and, critically, what dependable year-round water source replenishes the project's 24,000-gallon fire-water tank during a prolonged winter incident.

These are not remote or theoretical questions. Staff acknowledges toxic combustion products, smoke lasting many hours or longer, contaminated firefighting water, and the need for emergency response. The project may ultimately contain 341 battery enclosures.

The Commission should resolve these questions before approval, not leave them to be discovered during an emergency.

1. Staff's Offsite Consequence Analysis Stops at One Burning Container

The applicant's revised dispersion analysis evaluates complete combustion of a single battery enclosure and reports modeled concentrations below Staff's selected acute health thresholds at nearby residences.

The mathematical result is not the central problem. The problem is the scenario.

The project begins with 303 enclosures and may reach 341 through augmentation. The project's own Hazard Mitigation Analysis acknowledges that, if safety systems fail, a larger fire or explosion can occur and multiple BESS containers may become involved. It also recognizes that wind can influence flame behavior and propagation.

Yet the offsite health consequence analysis stops at one container.

The Commission should answer a straightforward question:

Why does a one-container fire reasonably bound the offsite consequences of a facility containing hundreds of containers when the applicant itself acknowledges that multi-container involvement is physically possible?

Staff may be able to establish that enclosure design, separation, dampers, thermal management, gas detection, deflagration controls, UL 9540A testing, and other protections make propagation sufficiently improbable. But that conclusion must be demonstrated. Calling a larger event 'lower likelihood' is not the same as establishing that it may be excluded from the reasonably foreseeable consequence analysis.

2. Fire-Propagation Controls Must Be Tied Directly to the One-Container Assumption

Because the less-than-significant offsite finding depends on preventing propagation, Staff should provide a coherent crosswalk between the fire-protection evidence and the modeled accident.

- minimum separation between BESS enclosures;
- tested fire behavior of the proposed enclosure and cell configuration;
- radiant heat at adjacent enclosures;
- the effect of wind on flame extension and propagation;
- the role of dampers, ventilation, gas detection, thermal management, and explosion controls;
- the failure combinations required for propagation;
- whether augmentation changes spacing, density, or fire-protection assumptions; and
- the technical basis for concluding that a multi-container event need not be modeled.

If this evidence already exists elsewhere in the record, Staff should assemble it and state the conclusion directly. The Commission should not have to infer the project's central fire-consequence assumption from scattered documents.

3. The 24,000-Gallon Tank Does Not, by Itself, Establish a Reliable Year-Round Fire-Water Supply

The project includes a 24,000-gallon onsite fire-water tank, and Dixon Fire Protection District participated in development of the fire-protection design. That establishes an initial onsite water supply. It does not answer how that supply is replenished during an extended incident.

This distinction matters at Corby because the adjacent Solano Irrigation District gravity agricultural irrigation system is seasonal. SID's published information states that water from its gravity agricultural irrigation systems is available during the Board-approved irrigation season, typically during the spring-through-fall agricultural season, with actual dates and individual-system availability varying from year to year.

The Commission therefore cannot assume that water visible in an SID ditch during irrigation season represents a dependable year-round emergency water source.

The practical question is simple:

Assume a battery fire begins at 2:00 a.m. on January 15. The onsite tank contains 24,000 gallons. SID's gravity irrigation system is out of season. If responders must apply water for prolonged exposure protection, prevention of propagation, or protection of adjacent equipment and vegetation, where does the next gallon of water come from?

Staff acknowledges elsewhere that smoke from a BESS thermal-runaway event could last many hours or longer. A fixed storage tank is therefore not necessarily equivalent to a sustainable emergency water source.

Staff's own HAZ-9 discussion makes the replenishment issue more concrete. Staff states that, during a BESS fire, water could be used on the container involved in the fire, on additional containers for firefighting or cooling, and on vegetation to reduce the risk of fire spread. That is a potentially continuing demand on the onsite supply, not merely a one-time use of the initial 24,000 gallons. The record should therefore identify the dependable source and delivery method for replenishment under the prolonged-event scenario Staff itself describes.

The Project Description identifies an onsite groundwater well as a potential source when SID water is unavailable. If that well is necessary to provide dependable year-round emergency fire-water replenishment, it is not merely an optional construction or irrigation source. It becomes part of the project's fire-protection infrastructure.

In that event, the well should be constructed, permitted, tested for sustainable flow, connected to the required fire-water system, and demonstrated operational before BESS operation begins.

If the well is not the year-round emergency source, Staff should identify what is.

The Commission should not approve a fire-protection finding that depends, expressly or implicitly, on seasonal irrigation water being available in January.

4. The Emergency-Access Finding Is Conclusory and Internally Inconsistent

Section 5.7 concludes that the project would not impair emergency response or evacuation, but the supporting analysis is thin.

Staff identifies Kilkenny Road and Byrnes Road as principal access routes and acknowledges construction-related restrictions or closures. It then relies largely on assurances that access will be maintained and closures coordinated.

That is not the same as demonstrating emergency access.

The Staff Assessment also contains conflicting descriptions of project entrances. Section 5.7 describes primary access from Kilkenny Road to the north and Byrnes Road to the east, while Section 3 identifies three project access connections on Byrnes Road.

The Commission is therefore being asked to approve an emergency-access finding without a consistent description of where emergency responders actually enter the project.

Staff should identify every emergency ingress and egress point and analyze apparatus travel time, lane-control delay, mutual-aid arrival, evacuation conflicts, and the alternative route if a primary road is unavailable.

Staff estimates that Dixon Fire Protection District would be first on scene in approximately 7 to 8 minutes and that Vacaville Fire Department mutual aid would arrive in approximately 13 minutes. Those estimates make the road question more, not less, important: the Staff Assessment should disclose what route assumptions underlie those times and whether they remain valid during construction lane control, an I-80 diversion, simultaneous resident evacuation, or loss of one intended access route.

5. Emergency Response Must Be Tested Against the Rural Road Conditions That Actually Exist

The emergency-response analysis cannot be isolated from the Transportation record. A reasonable analysis should test conditions that can foreseeably complicate response:

- a BESS fire while Kilkenny Road is under construction or lane control;
- a BESS fire during an I-80 incident that diverts traffic onto the local road network;
- simultaneous arrival of Dixon Fire, mutual-aid units, law enforcement, and project personnel;
- residents attempting to leave while emergency vehicles are arriving; and
- a plume or fire condition that makes one intended access road unusable.

A generalized promise to coordinate road closures with the County does not establish that emergency response and evacuation remain adequate under those conditions.

Staff's own General Plan discussion reinforces this concern. Section 5.7 identifies Solano County General Plan goals to reduce urban and wildland fire hazards and risks to public health from hazardous materials, and Policy HS.P-32 discourages construction of public facilities in areas of high or very high wildfire risk. Although Staff concludes the mapped wildfire classification does not trigger that policy here, the broader General Plan safety goals still require a project-specific demonstration that emergency access, hazardous-material response, and fire consequences have been adequately addressed.

6. The Future Emergency Response Plan Needs Binding Health-Based Action Thresholds

Staff relies on real-time air monitoring and a future Emergency Response Plan. Monitoring is useful only if dangerous readings are tied in advance to protective action.

Before operation begins, the plan should establish:

- health-based concentrations that trigger shelter-in-place;
- health-based concentrations that trigger evacuation;
- conditions requiring public warning;
- conditions requiring road closure;
- conditions requiring isolation or shutdown of additional equipment;
- who has authority to order each action; and
- required notification time and methods for nearby residents and responding agencies.

This does not require every tactical detail to be decided today. It does require enforceable performance standards for the public-health decisions on which the less-than-significant conclusion depends.

7. Air Monitoring and Post-Incident Sampling Are Response Measures, Not Prevention

Real-time air monitoring can tell responders that a toxic plume exists. It does not prevent the plume. Post-incident soil and water sampling can identify contamination. It does not prevent contaminated material from leaving the fire area.

Staff should therefore distinguish measures that actually reduce the probability or magnitude of thermal runaway, propagation, toxic emissions, contaminated runoff, and offsite exposure from measures that detect, characterize, or remediate consequences after the event.

That distinction matters when the combined Conditions of Certification are cited as the basis for reducing accident impacts to less than significant.

8. Fire-Water Replenishment and Contaminated Runoff Are Two Sides of the Same Water Question

The newly apparent year-round supply issue also sharpens the runoff question.

If a serious incident requires substantial water beyond the initial 24,000 gallons, Staff should identify both where that additional water comes from and where contaminated water goes after it is applied.

HAZ-9 provides for sampling and remediation. That is useful after an incident. Before certification, however, the record should identify the physical containment path: expected runoff volume, flow direction, capture feature, storage capacity, and the response if that capacity is exceeded.

Indeed, HAZ-9 requires a Sampling and Analysis Plan to determine whether firefighting water or other impacted liquids infiltrated soil or groundwater and to characterize contaminants after the event. That condition confirms Staff anticipates the possibility of contaminated fire water reaching environmental media. It does not identify the pre-incident containment volume or engineered pathway that prevents such releases in the first place.

If the stormwater and grading design already provides adequate containment, Staff should identify the relevant feature and capacity. If not, the Commission should require engineered containment sized to a reasonable fire-water scenario before operation.

9. The Site's Fire-Hazard Map Classification Does Not Resolve Project-Created Ignition Risk

The site's location outside a State Responsibility Area, Very High Fire Hazard Severity Zone, or CPUC High Fire-Threat District describes the existing wildfire setting. It does not establish that a 300-MW BESS cannot become an ignition source.

Staff does impose meaningful vegetation-management and defensible-space requirements, and those protections should be retained. But the project-created ignition and spread risk must stand on project-specific evidence, not on a map classification.

10. Requested Action

I respectfully request that the Commission require Staff to revise or supplement Section 5.7 before adopting final findings.

Specifically, Staff should:

1. Provide the substantial-evidence basis for using a single-container fire as the bounding offsite consequence scenario despite the acknowledged possibility of multi-container involvement;
2. Demonstrate how enclosure design, spacing, fire testing, thermal-management systems, ventilation controls, detection systems, and other protections support the conclusion that propagation need not be modeled;
3. Identify a dependable year-round source for replenishing the 24,000-gallon fire-water tank during an extended incident, including an incident occurring outside SID's irrigation season;
4. If the onsite groundwater well is necessary for emergency fire protection, require that it be permitted, constructed, flow-tested, connected as necessary, and demonstrated operational before BESS operation;
5. Reconcile the conflicting project-access descriptions and identify actual emergency ingress and egress points;
6. Provide a site-specific emergency-response and evacuation analysis addressing response time, rural road geometry, construction closures, mutual aid, I-80 diversion conditions, and loss of a primary route;
7. Require predetermined health-based action thresholds linking monitoring results to shelter-in-place, evacuation, public warning, road closure, and operational actions;
8. Separate preventive mitigation from monitoring, sampling, cleanup, and remediation in the less-than-significant finding;
9. Demonstrate adequate physical containment for contaminated firefighting water, including the capacity and flow path under a prolonged event; and
10. Clarify that mapped wildfire classifications do not substitute for analysis of BESS-created ignition and offsite fire spread.

Staff has done enough work on battery-fire risk that these remaining questions cannot fairly be dismissed as speculative.

The applicant's own materials recognize toxic emissions, long-duration smoke, the physical possibility of multi-container involvement, and the need for emergency response, fire water, air monitoring, and post-incident contamination testing.

The Commission is not being asked to imagine a hazard the record does not recognize. It is being asked to require the analysis to follow those recognized hazards to their logical conclusion.

That includes a basic water-supply question that should have a basic answer before approval: in the middle of winter, when SID's agricultural gravity system is not operating, what dependable source replenishes the fire-water tank during a prolonged BESS incident?

If the answer is the onsite well, make it part of the required fire-protection system. If the answer is another source, identify it and demonstrate its availability. What the Commission should not do is approve the project first and leave that question unanswered until a winter emergency.

These issues should be resolved before the project is approved, not after an emergency occurs.

For these reasons, I do not support approval of the Corby BESS at the proposed Kilkenny Road site. The unresolved fire-water, emergency-access, propagation, evacuation, and contaminated-runoff questions are consequences of placing a large BESS in this rural agricultural setting. They should not be deferred until after certification when an appropriate industrial alternative is available.

In addition to these comments, I formally incorporate by reference and fully support the technical comment letter submitted by Keep Vacaville Safe.

Respectfully submitted,

Michael Geller